

REMARKS

In the patent application, claims 1, 2, 4-19, 21-24 and 26-30 are pending. In the office action, all pending claims are rejected.

Applicant has amended claims 1, 19, 24 and 27.

Claims 1 and 19 have been amended to include the limitations that the request is for registration of the home address of the mobile node with the home agent and the home agent stores the home address to be registered.

The support for the claim amendment can be found on page 3, lines 2-3.

Claim 24 has been amended to change the wording.

Claim 27 has been amended such that the request includes the home address to be registered.

No new matter has been introduced.

At section 2 of the office action, claims 1, 19, 24 and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by *Agrawal et al.* (U.S. Patent Application Publication No. 2004/0024901, hereafter referred to as *Agrawal*), in view of *Hiller et al.* (U.S. Patent No. 6,445,922, hereafter referred to as *Hiller*)

In rejecting claims 1, 19, 24 and 27, the Examiner states that *Agrawal* discloses a method and apparatus for registering a home address as claimed (paragraphs [029], [0061] to [062]). The Examiner admits that *Agrawal* fails to disclose that the request include a network access identity of the mobile node and the home address to be registered. The Examiner points to *Hiller* to disclose this feature.

Applicant respectfully disagrees.

It is respectfully submitted that the claimed invention is concerned with a mobile node requesting registration of its home address with a home agent. According to the method and apparatus of the claimed invention, the mobile node sends a request to its home agent requesting registration of the home address of the mobile node with the home agent, and the home agent stores the home address to be registered, wherein the request

includes a network access identity of the mobile node and the home address to be registered.

In paragraph [0029], *Agrawal* discloses the use of dynamic home agent (DHA) in a framework for IP-based mobility management for IMT-2000. In particular, for intra-domain or macro-mobility, DHAs reside in a serving network and are assigned by a visited Authentication, Authorization and Accounting (AAA) server. A DHA allows a roaming mobile node to gain a local accessing server provider. In order for a mobile node to be identified by a network access identifier (NAI) in the visiting or foreign network, the mobile node must send a registration message to the foreign agent, which in turn interacts with the AAA server residing in that network.

Paragraphs [0061] and [0062] describe the communications between the mobile node 246 and one or more network components in a foreign network 240 as shown in Figure 2. As shown in Figure 2, the home agent of the mobile node 246 is home agent 212 in the home network 210 of the mobile node 246. When the mobile node 246 roams into a foreign network 240, the mobile node 246 sends a registration request 315 to a mobile agent (MA) 242. The mobile agent 242 replies with a shared care-of-address 320. The mobile node 242 may then send an update 325 to the home agent 212. The update 325 may include a registration request as specified in Mobile IP including a global care-of-address and a local care-of-address, and may request the home agent to create or modify the association in the home agent's table between the mobile node's home address and its global care-of-address (Figures 3A, 3B; paragraphs [0059], [0061], [0062]).

In the above paragraphs, *Agrawal* only discloses that when the mobile node is located in a foreign network, it sends a registration request to a mobile agent (MA) in the foreign network, and may send a request to its own home agent (212) for associating the mobile node's home address with the global care-of-address obtained from the mobile agent.

Agrawal has nothing to do with registration of a home address of a mobile node with a home agent. *Agrawal* does not disclose that the mobile node sends a request to its home agent requesting registration of home address of the mobile node with the home

agent and the home agent stores the home address to be registered, wherein the request includes a network access identity of mobile node and the home address to be registered.

Hiller discloses a method and system for support of overlapping IP addresses between an interworking function and a mobile IP foreign agent. In particular, *Hiller* is concerned with a method for correctly routing data packets to and from mobile nodes that are connected to the same visited data network and have overlapping home (IP) addresses (col.2, lines 30-33). *Hiller* discloses using a Mobile Identity table associated with an Interworking Function (IWF) and a Visitor List table associated with a Foreign Agent to store a Network Address Identifier (NAI) as a mobile node identifier. When a data packet travels across the visited data network in the reverse traffic direction, a composite packet is formed from the data packet and the NAI stored at the IWF. The composite packet is sent to the Foreign Agent which extracts the NAI and uses it with the Visitor List table to look up a Home Agent that corresponds to the mobile node and sends the data packet to the identified Home Agent (col.2, lines 38-51). When the data packet moves in the forward direction, the roles of the IWF and Foreign Agent are reversed (col.2, lines 51-56).

According to *Hiller*, the mobile node may send a registration request including its NAI to the IWF in order to identify itself. Upon receiving the composite packet, the Foreign Agent identifies the Home Agent associated with the mobile node based on the NAI. In the registration request sent from the Foreign Agent to the Home Agent, the home address (IP) of the mobile node may or may not be present. If the home address of the mobile node is not present, it implies that the mobile node desires the Home Agent to assign a home address (col.6, lines 36-39). Later when the IWF receives the registration reply from the Home Agent, the IWF will store the assigned home address of the mobile node so that the IWF can use the home address for later data routing purposes (col.6, lines 39-46). When needed, the Home Agent is able to provide a home address of the mobile node associated with the NAI so that a data package can be correctly routed. This shows that the home address of the mobile node sending the request is already known to the Home Agent. Thus, *Hiller* fails to disclose that the Home Agent stores the home address to be registered when it receives a request for registering a home address of the mobile node.

Hiller fails to disclose that home agent stores the home address to be registered.

Agrawal fails to disclose that home agent stores the home address to be registered.

For the above reasons, *Agrawal*, in view of *Hiller*, fails to render the independent claims 1, 19, 24 and 27 obvious.

At section 3 of the office action claims 1-2, 6, 8-9, 19, 23-24 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable by *Kakemizu et al.* (U.S. 2002/0006133, published January 17, 2002, hereafter referred to as *Kakemizu*), in view of Applicant's admitted Prior Art (AAPA), and further in view of *Hiller*.

In rejecting claim 1, the Examiner states that *Kakemizu* discloses a method for registering a location of mobile node in the home agent ([0022], [0168], [0182], [0265] and [0311]; claims 1 and 2). The Examiner admits that *Kakemizu* fails to teach registering a home address of a mobile node, but points to AAPA for disclosing that feature.

Applicant respectfully disagrees.

It is respectfully submitted that the claimed invention is aimed at solving the problem of AAPA regarding registering the home address of a mobile node with the home agent. In particular, on page 2, lines 11-12, of the specification, it is stated that currently, in Mobile IP, there is no way for a mobile node to register a home address dynamically created by the mobile node with a home agent in a secure way. *Kakemizu* has nothing to do with registering the home address of the mobile node with the home agent. Thus, even when incorporating the teaching in *Kakemizu* into AAPA, there is still no way for a mobile node to register a home address dynamically created by the mobile node with a home agent in a secure way.

In particular, AAPA does not disclose that the home agent stores the home address to be registered as part of the registration process. *Kakemizu* does not disclose that home agent stores the home address to be registered. *Hiller* also fails to disclose that home agent stores the home address to be registered.

For the above reasons, *Kakemizu*, in view of AAPA, and further in view of *Hiller* fails to render independent claims 1, 19, 24 and 27 obvious.

As for claims 2, 6, 8, 9 and 23-24, they are dependent from claims 1 and 19 and recite features not recited in claims 1 and 19. For reasons regarding claims 1 and 19 above, *Kamemizu* also fails to anticipate claims 2, 6, 8, 9, and 23-24.

At section 4, claims 4-5, 7-8, 10, 11, 15-18, 21-23, 26 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Kamemizu*, in view of AAPA and *Hiller*, and further in view of *Ohki* (U.S. Patent Application Publication No. 2004/00137888).

The Examiner cites *Ohki* for disclosing the feature that the mobile node is authenticated using security information based on the network access identity.

It is respectfully submitted that claims 4-5, 7-8, 10, 11, 15-18, 21-23, 26 and 28-30 are dependent from claims 1, 19 and 27 and recite features not recited in claims 1, 19 and 27. For reasons regarding claims 1, 19 and 27 above, *Kamemizu*, in view of AAPA and *Hiller* and further in view of *Ohki*, fails to render claims 2, 3, 6, 8, 9, 20 and 23-25 obvious.

At section 5, claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Kamemizu*, in view of AAPA and *Hiller*, and further in view *Kamemizu* (U.S. Patent Application Publication No. 2001/0036164, hereafter referred to as *Kamemizu'164*). The Examiner cites *Kamemizu'146* for disclosing the feature of the lifetime being refreshed.

It is respectfully submitted that claims 12 and 13 are dependent from claim 1 and recite features not recited in claim 1. For reasons regarding claim 1 above, *Kamemizu*, in view of AAPA and *Hiller*, and further in view of *Kamemizu'146*, fails to render claim 12 and 13 obvious.

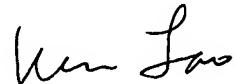
At section 6, claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Kamemizu*, in view of AAPA and *Hiller*, and further in view of *Akhtar* (U.S. Patent No. 7,079,499, hereafter referred to as *Akhtar*). The Examiner cites *Akhtar* for disclosing the feature of authentication using a hash function.

It is respectfully submitted that claim 14 is dependent from claim 1 and recites features not recited in claim 1. For reasons regarding claim 1 above, *Kamemizu*, in view of AAPA and *Hiller*, and further in view of *Akhtar*, fails to render claim 14 obvious.

CONCLUSION

Claims 1, 2, 4-19, 21-24, 26-30 are allowable. Early allowance of claims 1, 2, 4-19, 21-24, 26-30 is earnestly solicited.

Respectfully submitted,



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Date: May 14, 2009

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